



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/597,142

07/12/2006

Zeev Harel

940/2/1

6648

27317 7590 04/03/2009
Fleit Gibbons Gutman Bongini & Bianco PL
21355 EAST DIXIE HIGHWAY
SUITE 115
MIAMI, FL 33180

EXAMINER

KIKNADZE, IRAKLI

ART UNIT

PAPER NUMBER

2882

MAIL DATE

DELIVERY MODE

04/03/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/597,142 | Applicant(s) HAREL ET AL. | |
| | Examiner IRAKLI KIKNADZE | Art Unit 2882 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) 1-20 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15, 17 and 18 is/are allowed.
- 6) ☒ Claim(s) 1-14, 16, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In response to the Office action mailed on June 26, 2008, the Amendment has been received on December 24, 2008.

Claims 1, 2, 5, 6, 8, 11, 13-18 and 20 have been amended.

Claim 3 has been canceled.

Claims 1, 2 and 4-20 are currently pending in this application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the recitation "a plurality of N X-ray sources" renders the claim indefinite because claim teaches that N is an integer that may equal to 1. One X-ray source can not be a plurality of X-ray sources.

Regarding claim 1, the recitation "a plurality of M X-ray detectors" renders the claim indefinite because claim teaches that M is an integer that may equal to 1. One X-ray detector can not be a plurality of X-ray detectors.

Claim 1 recites the limitation "the operator" in line 12. There is insufficient antecedent basis for this limitation in the claim.

The resulting claim doesn't clearly set for the metes and bounds of the patent protection desired. Claims 2-14 are rejected by virtue of their dependence. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 7 and 10-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Hussein et al. (US Patent 5,600,303).

With respect to claim 1, Hussein teaches a remote XRD means for identifying a material in a volume of interest (VOI) comprising:

an X-ray source targeted towards the VOI; (the N X-ray sources wherein N is an integer equal to 1);

an X-ray detectors adapted to receive diffracted X-rays so an image comprising at least a portion of the obtained XRD patterns is obtained; (M X-ray detectors, wherein M is an integer equal to 1);

a processor adapted to measure the patterns;

a database comprising records of patterns' parameters characterizing predetermined materials; a database comprising records of materials that a notification should be provided when identified; and, alerting means adapted to alert the operator when the identified material is one of the predetermined group (column 13, line 66-column 14, line 20; column 19, lines 30-35; column 21, lines 1-51; column 24, lines 50-63; column 37, lines 48-62).

With respect to claim 2, Hussein teaches that the material is selected from at least one of the group of explosives, flammable substances, toxic substances, chemical and biological warfare agents in form chosen from the group consisting of solids, spores, drugs and narcotics, radioactive agents or a combination thereof (column 22, lines 10-15).

With respect to claim 4, Hussein teaches that the material is being transferred on a passenger and/or in his carry-on luggage (column 37; lines 49-63).

With respect to claim 5, Hussein teaches that the XRD is any technique adapted for calculating the energy profile obtained by X-ray scattering of the material (column 20, lines 26-33).

With respect to claim 6, Hussein teaches that the XRD is any technique adapted for calculating the diffraction pattern or energy profile obtained by X-ray back scattering of the material (column 20, lines 26-33).

With respect to claim 7, Hussein teaches that the X-ray detector is a 2D detector (column 18, line 31).

With respect to claim 10, Hussein teaches that the XRD means are adapted to identify moving VOIs (column 19; lines 36-45).

With respect to claim 11, Hussein teaches that the XRD means are adapted to identify sampled moving VOIs; additionally comprising means to sample VOI so the presence of the VOI is notified; and means to surveillance or follow up the VOI before identifying its nature (column 19; lines 36-45 and column 20, lines 9-25).

With respect to claim 12, Hussein teaches that the XRD means are adapted for online surveillance or follow up (column 20, lines 9-25).

With respect to claim 13, Hussein teaches that the alerting means are adapted to alert either online or offline, to alert to a predetermined remote location, to be in communication with effective means adapted to isolate or immobilize the VOI transport until subsequent notification or any combination thereof (column 20, lines 9-25).

With respect to claim 16, Hussein teaches a method for acquiring XRD image of a material in a VOI, comprising the steps of:

- obtaining remote XRD means as defined in claim 1;
- receiving VOI coordinates from lower stage system;
- irradiating the material in the VOI; acquiring of XRD patterns;
- extracting of XRD patterns;

converting the XRD patterns of VOI to standard powder X-ray diffraction spectrum (column 20, lines 53-63);

searching and/or matching records in a database for material identification; and then, alerting in case the material is in matching a predetermined record (column 13, line 66- column 14, line 20; column 19, lines 30-35; column 21, lines 1-51; column 24, lines 50-63; column 37, lines 48-62).

With respect to claim 17, Hussein teaches that the back-diffraction is provided (column 38, lines 16-29).

Claim Rejections - 35 USC § 103

6. Claims 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hussein et al. (US Patent 5,600,303) as applied to claims 1 and 16 above, and further in view of Hopkins et al. (US Patent Application Publication 2006/0067471 A1).

7. With respect to claims 14, 18 and 20 Hussein teaches claimed invention except for detector adapted for acquiring both image and information about its energy profile. Hopkins teaches a detector adapted for acquiring both image and information about its energy profile (see paragraphs 0010 and 0011; claim 15) providing user with the capabilities to improve detection efficiency and provide excellent signal-to-noise performance and coverage (see paragraph 0002). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the detector adapted for acquiring both image and information about its energy profile as suggested by Hopkins in the method and apparatus of Hussein, since such a modification would

Art Unit: 2882

provide user with the capabilities to improve detection efficiency and provide excellent signal-to-noise performance and coverage.

Allowable Subject Matter

8. Claims 15-18 are allowed.

9. Claims 8 and 9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With respect to claims 8 and 9, prior art fails to teach or make obvious a remote XRD means according to claim 1, wherein the processor is adapted to measure at least a portion of the full Debye-Scherrer rings as claimed in combination with all of the remaining limitations of the base claim and any intervening claims.

With respect to claims 15, 17 and 18, prior art fails to teach or make obvious a method for acquiring XRD images of a material in a VOI, comprising the steps of: acquiring of Debye-Scherrer XRD patterns of the material in the VOI; d. extracting of the Debye-Scherrer XRD patterns; converting the said XRD patterns (e.g. rings) of said VOI to standard powder X-ray diffraction spectrum spectra; wherein the method enables identification of suspicious substances within the VOI with substantially high efficiency

as claimed in combination with all of the remaining limitations of the base claim and any intervening claims.

Response to Arguments

10. With respect to claims 1-14, 16, 19 and 20, Applicant's arguments filed December 24, 2008 have been fully considered but they are not persuasive. Hussein et al. (US Patent 5,600,303) clearly teaches that an X-ray source targeted towards the VOI; (the N X-ray sources wherein N is an integer equal to 1, accordingly system may have only one X-ray source); an X-ray detectors adapted to receive diffracted X-rays so an image comprising at least a portion of the obtained XRD patterns is obtained; (M X-ray detectors, wherein M is an integer equal to 1, accordingly system may have only one X-ray detector); in combination with all of the remaining limitations of the claim. Currently amended claim 1 is anticipated by prior art. Rejection is proper and stands.

Applicant's arguments, see pages 22-29, filed 12/24/2008, with respect to claims 15, 17 and 18 have been fully considered and are persuasive. The rejection of claims 15, 17 and 18 has been withdrawn.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See

Art Unit: 2882

MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to IRAKLI KIKNADZE whose telephone number is (571)272-2493. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2882

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Irakli Kiknadze

/Irakli Kiknadze/

Primary Examiner, Art Unit 2882

/I. K./ March 29, 2008